

Course Outline

ADVANCED ADMINISTRATION OF UNIFIED COMMUNICATIONS MANAGER AND FEATURES Course AAUCMF: 5 days Instructor Led

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About this course

Advanced Administration for Unified Communications Manager and Features (AAUCMF) is a 5-day instructor led course that is intended for experienced unified communications administrators who need in-depth knowledge of Cisco Unified Communications Manager advanced features, services, and troubleshooting.

The class utilizes Cisco Unified Communications Manager 12.5 labs and will employ the North American Numbering Plan (NANP). Both SCCP and SIP phones are implemented, as well as both H.323 and SIP gateways.

After a short review of Unified Communication architecture and basic administration, the course begins with a discussion of new and changed features from previous versions of CUCM. It then moves into implementation of a multi-site dial plan architecture including signaling, call routing for multiple sites with overlapping directory numbers, digit manipulation, automated alternate routing, PSTN backup- and TEHO implementation. Next, call admission control, hardware media resource implementation, and inter-cluster communications are addressed. Students will spend time implementing extension mobility, unified mobility (including single-number reach) and device mobility. The CUCM portion of the class concludes with a module on tools, tips and tricks for the Bulk Administration Tool and a lesson on reading CUCM trace files for troubleshooting.

Audience profile

- Experienced Unified Communications Engineers
- Anyone who has attended ACUCM+AUC and needs more training on advanced features and troubleshooting

At course completion

After completing this course, students will be able to:

- Describe CUCM signaling to phones, gateways, and media resources (H.323, SIP, SCCP)
- Configure inbound and outbound call routing in a multisite environment with overlapping DNs
- Configure intersite dialing with PSTN backup using Local Route Groups
- Use class of control to control inbound call flow and permit blocking of inbound calls
- Implement Survivable Remote Site Telephony for both SCCP and SIP devices
- Implement intersite and intercluster Call Admission Control and intersite Automated Alternate Routing
- Implement DSP hardware media resources
- Implement Tail-End Hopoff (TEHO)
- Configure Extension Mobility, Unified Mobility (Single Number Reach and Mobile Voice Access), and Device Mobility
- Use CUCM Tools such as the Real Time Monitoring Tool to Monitor and perform basic Troubleshooting
- Deploy new CUCM 10.x Features such as Native Call Queuing, Intercluster CAC and Deterministic Codec Selection
- Generate and Read Trace Files for SCCP, SIP and H.323 Call Setup and Resource Allocation

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Module 1: Review of CUCM and Overview of New Features

Module 2: Understanding End-User Implementation Options

- Lesson 1: Implementing End Users in CUCM Including LDAP Integration
- Lesson 2: Review of Cisco IP Phones and SCCP and SIP Signaling
- Lesson 3: Universal Device and Line Templates and Feature Group Templates

Module 3: Dial Plan Architecture

- Lesson 1: H.323 and SIP Protocols and Signaling
- Lesson 2: Local Route Groups
- Lesson 3: Inbound Calls Routing in a Multisite Environment
- Lesson 4: Implementing Survivable Remote Site Telephony
- Lesson 5: Implementing Cisco Unified SCCP SRST
- Lesson 6: Implementing SIP SRST
- Lesson 7: Implementing Communications Manager Express in SRST Mode

Module 4: Intersite and Intercluster Calling Architecture and Features

- Lesson 1: Locations-Based Call Admission Control and AAR
- Lesson 2: Media Resource Implementation (DSPs)
- Lesson 3: Native Call Queuing
- Lesson 4: Configuring Intercluster Enhanced Locations Call Admission Control
- Lesson 5: Configuring Tail End Hop Off

Module 5: Implementation of Features and Applications for Multisite Deployments

- Lesson 1: Implementing Cisco Extension Mobility
- Lesson 2: Configuring Cisco Unified Mobility
- Lesson 3: Implementing Device Mobility

Module 6: Tools & Troubleshooting

- Lesson 1: BAT Tips and Tricks
- Lesson 2: Planning Firmware Upgrades
- Lesson 3: Reading Common Voice IOS Debug Output
- Lesson 4: Reading RTMT Trace Files

Labs:

Course Outline

- Lab 1-0: Connecting to the Remote Lab
- Lab 2-1: Preparing the Lab Environment
- Lab 2-2: Implementing Site-Specific Device Pools
- Lab 2-3: Building SCCP Phones using the Self-Provisioning IVR and End Users using LDAP Integration
- Lab 2-4: Building Branch Phones
- Lab 3-1: Implementing Basic Multisite Connections
- Lab 3-2: Building Line/Device Class of Service
- Lab 3-3: Implementing Call Routing in a Multisite Environment
- Lab 3-4: Configuring Inbound Calling in a Multisite Environment
- Lab 3-5: Implementing SRST
- Lab 4-1: Implementing CAC and AAR
- Lab 4-2: Implementing Media Resources
- Lab 4-3: Configuring Hunting with Native Call Queuing
- Lab 4-4: Deploying the Intercluster Lookup Service and Global Dial Plan Replication
- Lab 4-5: Implementing a Basic CUBE with Local Transcode Resources
- Lab 4-6: Implementing Tail-End Hopoff (TEHO)
- Lab 5-1: Configure Extension Mobility
- Lab 5-2: Configuring Cisco Unified Mobility (SNR and MVA)
- Lab 5-3: Configure Device Mobility
- Appendix Lab: Generating CUCM CAR Tool Reports

Optional Additional Labs

- Lab A1: Extension Mobility Cross Cluster
- Lab A2: Generating CUCM CAR Tool Reports